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A study to determine the effectiveness of neonatal home care instructional module on knowledge of practice and attitude among mothers admitted at the community center, Bathinda, Punjab.

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Abstract:*An experimental study was conducted to determine the effectiveness of neonatal home care instructional module on knowledge of practice and attitude among mothers in community center, Bathinda District in Punjab. The objectives of the study were to assess and compare the effectiveness of home care instructional module on knowledge of practice among mothers in experimental and control group. Also to correlate and associate the knowledge of practice with attitude on neonatal home care among mothers with their selected background variables in both the groups. A true experimental research design was adopted. Using simple random sampling technique 60 postnatal mothers were chosen with 30 in experimental group and 30 in control group. The findings revealed that experimental group had adequate knowledge of practice at the level of P<0.001 than control group. Experimental group had a good attitude at the level of P<0.001 than control group. No correlation between knowledge of practice and attitude was identified in both the groups. Experimental group showed no association between demographic, maternal, neonatal variables and knowledge of practice and attitude. To lower the morbidity and mortalities of newborn, anew born homecare practices are indispensable. Multifarious approach is required in improving the care of newborn and its outcomes.*
Keywords:*postnatal mother, newborn, home care, instructional module*

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I. Introduction

Newborn undergo profound physiologic changes at the moment of birth as they are released from a warm, snug, dark, liquid – filled environment that has met all of their basic needs into chilly, unbounded, brightly lit, gravity based, outside world[1].Newborn babies constitute the foundation of a nation and no sensible government can afford to neglect their needs and rights. Healthy and sturdy babies are likely to evolve as physically and mentally strong adults with enhanced quality of human resource development. Neonatal deaths account for 64% of all infants' deaths in India[2]. Every year, nearly 40% of all under-five deaths are among newborns. Almost all (99%) of these neonatal deaths occur in developing countries with the highest rates in sub-Saharan Africa (35 deaths per 1000 live births in 2010)[3]. Lack of knowledge, coupled with strong cultural beliefs, influence neonatal survival once the infant is at home with the primary caregiver[4].

It is well established that the welfare of a child and his future are totally dependent upon the care and attention bestowed upon him before and after birth. The important task of motherhood is to fulfil physical, emotional, social, intellectual and moral needs of children[5]. Most neonatal deaths can be avoided through simple, affordable interventions, especially in areas with weak health systems and high rates of neonatal mortality. Outreach and family-community care, health education to improve home-care practices, recognition of danger signs, generation of demand for skilled care, and increased health-seeking behavior can lead to significant reductions in neonatal mortality[6].

Essential newborn care (ENC) practices that protect against newborn morbidity and mortality include clean cord care (cutting and tying of the umbilical cord with a sterilized instrument and thread), thermal care (drying and wrapping the newborn immediately after delivery and delaying the newborn's first bath for at least six hours or several days to reduce hypothermia risk), and initiation of breastfeeding within the first hour of birth. ENC aims at addressing poor care practices immediately following delivery[7].

One half of all deaths that occur during the first year of life occur during the first year of life occur in the first 24hours after birth an indications of how hazardous a time this is for an infant (World health Organization WHO, 2012).[8] WHO reported that 6.9 million children under the age of five died in 2011. It also reported that a child's risk of dying is highest in the neonatal period, the first 28 days of life. Safe childbirth and

effective neonatal care are essential to prevent these deaths. 43% of child deaths under the age of five take place during the neonatal period, more than three million babies die every year in their first month of life and a similar number are still born. Within the first month, one quarter to one half of all deaths occurs within the first 24 hours of life, and 75% occur in the first week. The 48 hours immediately following birth is the most crucial period for new-born survival. This is when the mother and child should receive follow-up care to prevent and treat illness[9].

Worldwide about eight newborn babies die every minute. Every year more than four million babies die during first week of life due to inadequate care by mothers/ care givers. India accounts for 27% of global neonatal deaths and 30% of neonatal mortality in the state of Uttar Pradesh (UP). Thus, nearly 10% of all global neonatal deaths take place in this state of India. The characteristics of this part of India are very similar to several other Indian states as well as large sections of Bangladesh, Southern Nepal and Pakistan[10]. Substantial progress has been made towards achieving Millennium Development Goal 4. The number of under-five deaths worldwide has declined from more than 12 million in 1990 to 7.6 million in 2010. It was estimated that nearly 21,000 children under five were dying every day in 2010 and about 12,000 were dying per day in year 2011[11].

Promotion of essential newborn care practices is one strategy for improving newborn health outcomes and to minimize the illness and maximize their growth and development. The World Health Organization has defined essential newborn care to include clean delivery and clean cord care, thermal protection, keeping newborn warm, kangaroo mother care, early and exclusive breastfeeding, eye care, immunization, care for the low birth weight newborns, and management of newborn illness[12].

The good essential newborn care practices immediately after delivery play a major role in causing neonatal morbidities and mortalities. Essential new born care practices were outlined to decrease the neonatal morbidity and mortalities[13]. These good practices include clean cord care, thermal care, kangaroo mother care and initiating breastfeeding immediately after birth (within 1 hour). The traditional practices like applying cow dung on the umbilical stump, oil instillation into nose etc also contribute to newborn's risk of morbidity and mortality[14]. Therefore it is necessary for the mother and her family to understand these aspects of childbirth and newborn care practices and be prepared to react for the potential dangers signs[15].

II. Material and Methods

A study to determine the effectiveness of neonatal home care instructional module on knowledge ofpractice and attitude among mothers admitted at community center, Bathinda, Punjab

Research Approach: Evaluative approach was considered to achieve the set of objectives.
Research Design: True experimental design with manipulation, control and randomization
Setting: Community Health Center, Bathinda, Punjab
Population: All the mothers who delivered normal term newborn and admitted in community center.
Sample and Sampling Technique: Postnatal mothers those who fulfill the inclusion criteria.
Simple random sampling was used. The group was randomized first using lottery method and then samples were selected.

Tools and Scoring: The tool isdivided into three sections A, B, C
SECTION-A: Questionnaire on background variables
PART-1 Demographic variables, PART-2 Maternal variables, PART-3 Neonatal variables

SECTION-B: Questionnaire on knowledge of practice related to neonatal home care, it covers various aspects in 30 questions.

SECTION-C: Questionnaire on mother's attitude related to home care. It is measured by using 4 point rating scale.

Reliability: The reliability of the instrument was assessed by using split half method. The 'r' value was 0.7. So, the tool was considered as reliable one.

Table1: Comparison of effectiveness of homecare instructional module on knowledge of practice among mothers between experimental and control group (n=30)

Knowledge of practice aspects	Improvement for experimental group		Improvement for Control group		Independent t- Value
	Mean	S.D	Mean	S.D	
Care of newborn	38.33	15.02	4.58	18.42	7.78 ***
Nutrition & breast feeding	33.33	21.01	0.01	31.1	4.86 ***
Hygiene & prevention of infection	35.56	38.09	3.33	31.98	3.55 ***
Safety	16.67	23.97	5.56	23.29	3.64 ***
Minor problems of newborn & its home management	32.22	25.49	10.00	37.29	2.69 ***
Identifying warning signs& seeking medical assistance	2.22	12.17	1.11	6.08	1.34
Overall knowledge	28.78	11.53	1.56	11.09	9.32 ***

***: P< 0.001
** : P< 0.01
NS: Not Significant
Comparison of effectiveness of self-instructional module between two groups regarding knowledge of practice showed that there was a significant improvement in all the aspects at the level of P< 0.001 except, that identifying warning signs and seeking medical assistance which had no significant difference in the level of knowledge of practice. In minor problems of newborn & its home management there was a significant difference in knowledge of practice at level of P< 0.01(t=2.69)

Table 2: Comparison of effectiveness of home care instructional module on attitude among mothers between experimental and control group (n=30)

Groups	Improvement for experimental group		Independent t-value
	Mean	SD	
Experimental group	17.61	6.98	9.69 *** (P<0.001)
Control group	0.72	6.50	

Comparison of attitude between experimental and control group which showed highly significant difference in the value of mean and SD with a calculated‘t’ value of 9.69 which was significant at the level of P< 0.001

Table 3: Correlation Between overall knowledge of practice with attitude among mothers in pre and posttest for experimental group (n=30)

Groups	Knowledge of practice		Attitude		Correlation r- value
	mean	SD	mean	SD	
Pre Test	45.89	8.01	55.22	4.78	0.015 NS
Post Test	74.67	8.78	72.83	4.71	-0.159 NS

Table 3 Shows that there was no significant relationship between knowledge of practice and attitude in pretest and posttest.

Table 4: Association of demographic variables with the level of knowledge of practice in posttest for experimental group (n=30)

Demographic variables	Moderately adequate		Adequate		Chi-square Value – X^2
	No	%	No	%	
1.Age (in years)					
a. <20	4	80.0	1	0.0	
b. 21-25	9	40.9	13	59.1	3.41
c. 26-30	1	50.0	1	50.0	NS
d. > 31	-	-	1	100.0	
2.Type of family					
a. Nuclear family	8	57.1	6	42.9	1.76
b. Joint family	6	40.0	9	60.0	NS
c. Extended family	-	-	1	100.0	
3. Educational status					
a. No formal	3	42.9	4	57.1	
education	2	66.7	1	33.3	2.75
b. Primary	6	60.0	4	40.0	NS
c. Secondary	1	20.0	4	80.0	
d. Hr.Sec	2	40.0	3	60.0	
e. Graduates & above					
4.Occupation					
a. House wife	10	45.5	12	54.5	
b. Unskilled labour	1	50.0	1	50.0	1.25
c. Skilled labour	3	60.0	2	40.0	NS
d. Business	-	-	1	100.0	
5.Family monthly					
income(Rs)	-	-	4	100.0	
a. 1000-2000	7	70.0	3	30.0	
b. 2001-3000	2	40.0	3	60.0	13.30
c. 3001-4000	4	100.0	-	-	**
d. 4001-5000	1	14.3	6	85.7	
e. > 5000					
6.Habitant					
a. Urban	13	54.2	11	45.8	
b. Sub urban	1	20.0	4	80.0	2.85
c. Rural	-	-	1	100.0	NS
7.Social support					
a. Yes	13	48.1	14	51.9	0.24
b. No	1	33.3	2	66.7	NS
8.Source of support					
a. Husband	13	44.8	16	55.2	1.18
b. Maternal relatives	1	100.0	-	-	NS

As per the table 4, there was no significant association between level of knowledge of practice, age, type of family, educational status, occupation, habitant, social support and source of support. But in family monthly income there was a significant association at the level of P< 0.01

Table 5: Association of maternal variables and neonatal variables with the level of knowledge of practice in posttest for experimental group (n=30)

Maternal and neonatal variables	Moderately adequate		adequate		Chi-square Value X^2
	No	%	No	%	
1.Number of gravida					
a. 1	12	52.2	11	47.8	1.20
b. 2+	2	28.6	5	71.4	NS
2.Number of parity					
a. 1	12	52.2	11	47.8	1.20
b. 2+	2	28.6	5	71.4	NS

3.Number of live birth					
a. 1	12	52.2	11	47.8	1.20
b. 2+	2	28.6	5	71.4	NS
4.Number of abortion					
a. No abortion					
b. 1	-	-	-	-	-
c. 2+					
5.Number of still birth					
a. No still birth					
b. 1	-	-	-	-	-
c. 2+					
6.Type of delivery					
a. SVD with episiotomy	-	-	-	-	-
b. SVD without episiotomy					
7.Sex of the baby					
a. Male	10	58.8	7	41.2	0.47
b. Female	6	46.2	7	53.8	NS
8.Weight at birth (Kg)					
a. 2.5-3.0	10	52.6	9	47.4	0.01
b. 3.1-3.5	6	54.5	5	45.5	NS
c. >3.5	-	-	-	-	-

The table 5 shows that there is no significant association between maternal, neonatal variables and knowledge of practice.

Table 6: Association of demographic variables with the level of attitude in post-test for experimental group (n=30)

Demographic variables	Moderately adequate		Adequate		Chi-square Value – X^2
	No	%	No	%	
1.Age (in years)					
a. <20	5	100.0	-	-	
b. 21-25	8	36.4	14	63.6	9.54
c. 26-30	2	100.0	-	-	*
d. > 31	1	100.0	-	-	
2.Type of family					
a. Nuclear family	8	57.1	6	42.9	1.22
b. Joint family	8	53.3	7	46.7	NS
c. Extended family	-	-	1	100.0	
3. Educational status					
a. No formal education	4	57.1	3	42.9	
	1	33.3	2	66.7	0.75
b. Primary	5	50.0	5	50.0	NS
c. Secondary	3	60.0	2	40.0	
d. Hr.Sec	3	60.0	2	40.0	
e. Graduates & above					
4.Occupation					
a. House wife	13	59.1	9	40.9	
b. Unskilled labour	1	50.0	1	50.0	1.80
c. Skilled labour	2	40.0	3	60.0	NS
d. Business	-	-	1	100.0	
5.Family monthly income(Rs)	3	75.0	1	25.0	6.84
a. 1000-2000	7	70.0	3	30.0	NS
b. 2001-3000	2	40.0	3	60.0	
c. 3001-4000	-	-	4	100.0	
d. 4001-5000	4	57.1	3	42.9	
e. > 5000					
6.Habitant					
a. Urban	12	50.0	12	50.0	1.07

b.	Sub urban	3	60.0	2	40.0	NS
c.	Rural	1	100.0	-	-	
7.Social support						
a.	Yes	16	59.3	11	40.7	3.85
b.	No	-	-	3	100.0	*
8.Source of support						
a.	Husband	16	55.2	13	44.8	1.18
b.	Maternal relatives	-	-	1	100.0	NS

Table 6 depicts that the level of attitude was significantly associated with social support and the age at the level of P< 0.05. The other demographic variables were not associated with the level of attitude.

Table 7: Association of maternal variables and neonatal variables with the level of knowledge of practice in posttest for experimental group (n=30)

Maternal and neonatal variables	Moderately adequate		adequate		Chi-square Value X^2
	No	%	No	%	
1.Number of gravida					
a. 1	12	52.2	11	47.8	0.053
b. 2+	4	57.1	3	42.9	NS
2.Number of parity					
a. 1	12	52.2	11	47.8	0.053
b. 2+	4	57.1	3	42.9	NS
3.Number of live birth					
a. 1	12	52.2	11	47.8	0.053
b. 2+	4	57.1	3	42.9	NS
7.Sex of the baby	10	58.8	7	41.2	0.47
a. Male	6	46.2	7	53.8	NS
b. Female					
8.Weight at birth (Kg)					
a. 2.5-3.0	10	52.6	9	47.4	0.01
b. 3.1-3.5	6	54.5	5	45.5	NS
c. >3.5	-	-	-	-	

Table 7 shows that there was no significant association between maternal, neonatal variables and level of attitude

III. Results and Discussions

- Experimental group had adequate knowledge of practice at the level of P<0.001 than control group.
- Experimental group had good attitude at the level of P<0.001 than control group.
- No correlation between knowledge of practice and attitude was identified in both the groups.
- Experimental group showed no association between demographic, maternal, neonatal variables and knowledge of practice and attitude.

Nursing Implications

Nursing Practice

Care of newborn is not so natural as it was thought to be.it has to be learned, practiced and need a lot of determination and effort on the part of the mother, nurses need to accept the responsibility of helping mothers in gaining knowledge, skill and attitude necessary to care the newborn successfully. Maternity nurses can play a major role in facilitating mother's effort to care the newborn by optimal usage of module, as it was found to be effective to impart education during postnatal period. The module can be used by the nurse midwives in the maternity wards, outpatient departments and also in community midwifery practice. It can be included as one of the teaching items.

Nursing Education

Care for newborn and their management can be included in the curriculum so that, students can apply skills in assisting mothers, teaching them about care of new born, making them knowledgeable and skillful in caring he newborn. This module can serve as an educational tool in CNE's for staff nurses working in maternity units. For educated mothers module can be used as self-learning material.

Nursing Administration

Nursing leaders are challenged to undertake the health needs of most vulnerable groups, especially maternal and child health by effective organization and management. Checklist audit chart for assessment of maternity care in relation to newborn care can be applied in the maternity unit.

Nursing Research

The researcher should be able to conduct the research on each and every aspects of newborn care in order to generate in-depth and relevant scientific data. This study helps the nurse researchers to develop insight in formulating self- instructional module for newborn care towards promotion of healthy baby and prevention of complications.

IV. Recommendations

- This study can be replicated with large samples.
- A comparative study can be done in urban and rural setting
- A study can be conducted to assess the educative role of nurses on newborn care.

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